ISSN (print) 0093-4666 © 2010. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

DOI: 10.5248/113.61

Volume 113, pp. 61–71 *July–September 2010*

Notes on *Trametes* from the Brazilian Amazonia

Allyne Christina Gomes-Silva[1], Leif Ryvarden[2] & Tatiana Baptista Gibertoni[1]

allynefungi@hotmail.com tbgibertoni@hotmail.com

[1] *Universidade Federal de Pernambuco, Departamento de Micologia*
Av. Nelson Chaves s/n, CEP 50760-420, Recife, PE, Brazil

[2] *leif.ryvarden@bio.uio.no*
University of Oslo, Department of Botany
P. O. Box 1045, Blindern, N-0316, Oslo, Norway

Abstract — *Trametes supermodesta* is reported as new to Brazil and the collection represents the second from South America. *Trametes ochroflava* and *T. pavonia* represent first records for the Brazilian Amazonia. A description of *T. supermodesta* and a key to the accepted species of *Trametes* reported for the Brazilian Amazonia are provided.

Key words — *Polyporaceae*, diversity

Introduction

Trametes is a cosmopolitan genus proposed by Fries and comprises about 48–50 species so far (www.indexfungorum.org; Kirk et al. 2008). The species of *Trametes* cause white rot of dead hardwood and (rarely) conifers. The genus is characterized by its sessile to effused–reflexed, light–colored basidiomata, poroid hymenial surface with round, angular to irregular pores, trimitic hyphal system, presence or absence of cystidia, and ellipsoid to allantoid, hyaline, smooth basidiospores that do not react in Melzer's reagent (Ryvarden & Gilbertson 1993).

Despite the high biodiversity of the Brazilian Amazonia, the knowledge about *Trametes* is still scarce, with only nine species reported: *T. cotonea*, *T. cubensis*, *T. lactinea*, *T. marianna* (Pers.) Ryvarden 1973, *T. maxima*, *T. membranacea*, *T. modesta*, *T. pubescens* (Schumach.) Pilát 1939, and *T. villosa* (Gomes-Silva & Gibertoni 2009). *Trametes supermodesta* was first described from Venezuela (Ryvarden & Iturriaga 2003), and we provide a description of the species based on collections from the Brazilian Amazonia, a key of the species of the genus in the area, and comments on the species recently collected or deposited in INPA.

Material and methods

The Amazonia covers an area of 4,196,943 km^2 out of which approximately 50% belongs to Brazil (Capobianco et al. 2001), in the states of Acre, Amapá, Amazonas, Pará, Roraima, Rondônia, half of Mato Grosso (54%), and part of Maranhão (34%) and Tocantins (9%) (IBGE 2003).

Field trips were undertaken four times from 2007 to 2008 in the state of Rondônia and four times from 2006 to 2008 in the state of Pará. In Rondônia, the study areas were located in Estação Ecológica de Cuniã (08º04'S 63º31'W) of the city of Porto Velho, the state capital and Parque Natural Municipal de Porto Velho (08º45'S 63º54'W). Both areas are covered mostly by open ombrophilous forest and transition forest with savanna. In Pará, the Estação Científica Ferreira Penna (1°44'S 51°27'W) includes typical Amazonian ecosystems and its flora is one of the richer in the Amazonian basin (Lisboa 2002). Additionally, three areas in Rondônia were also visited at irregular intervals, and specimens deposited in INPA were also studied.

The basidiomata were analyzed macro– (shape, color, hymenial surface) and micromorphologically (hyphal system, presence/absence and measurements of sterile structures and basidiospores). Microscopical observations were made from slide preparations with 5% KOH, stained with 1% of aqueous phloxine, and Melzer's reagent (Ryvarden 1991). Color designations follow Watling (1969). The specimens are deposited in the HFSL and in URM.

Results

Thirteen species of *Trametes* are reported for the Brazilian Amazonia. *Trametes supermodesta,* previously was only from its type locality, is reported for the second time. Although recently described, several earlier collections had already been deposited in INPA. *Trametes ochroflava* and *T. pavonia* are new records for the Brazilian Amazonia and, together with another seven species that are new records for individual Brazilian States in Amazonia, were studied only from collections deposited in INPA, underscoring the importance of herbaria revisions and accessibility of herbaria records.

Taxonomy

Trametes supermodesta Ryvarden & Iturr., Mycologia 95(6): 1074 (2003).

Basidiomata annual, pileate, semicircular to flabelliform with a contracted base, solitary or gregarious, up to 3.5–5 cm wide and 2.3–3.5 cm high, 0.2 mm thick, slightly flexible. Abhymenial surface glabrous, dull, concentrically zonate, slightly sulcate, cinnamon (10) to buff (52). Margin entire, acute, concolorous with the abhymenial surface. Context homogeneous, fibrous, thin, up to 0.1 mm thick, cinnamon (10) to buff (52), red in KOH. Tubes more or less concolorous with the pore surface, thin, up to 0.1 mm thick. Hymenial surface with angular pores next to the margin and irregular to slightly decurrent in the rest of the hymenial surface, 2–3 per mm, fawn (29) to clay pink (30).

Hyphal system trimitic; generative hyphae hyaline to yellow, clamped, thin-walled, 2–3.5 µm; skeletal hyphae yellow, thick-walled, 3–5 µm; binding hypha hyaline to yellow, thick-walled to solid, 2–3.5 µm. Cystidia absent. Basidia not observed. Basidiospores cylindrical, hyaline, thin-walled, smooth, inamyloid, 8–9 × 2.8–3.5 µm.

Substrate — on deciduous wood.

Material examined: BRAZIL. Amazonas: loc. n. det., 10.VII.1971, G.T. Prance et al.14035-14074 (INPA 32250, INPA 32289); 24.VII.1971, G.T. Prance et al. 14545 (INPA 32761); 16.IX.1980, B. Lowy et al. 185-196 (INPA 100113, INPA 100083); Presidente Figueiredo, 27.II.1985, C. Dick 678 (INPA 185927); Manaus, 17.II.1990, M.A. de Jesus 1454 (INPA 192699, as *T. modesta*); 17.VII.1990, M.A. de Jesus 1449 (INPA 192695, as *T. modesta*); Pará: Oriximiná, 27.VI.1980, V.L.R. Bononi 618 (INPA 103601); 28.VI.1980, V.L.R. Bononi 658 (INPA 103622); 30.VI.1980, V.L.R. Bononi 816 (INPA 103723); Rondônia: loc. n. det., 4.VII.1968, K.P. Dumont et al. 63-65 (INPA 65103, INPA 65105, as *T. scabrosa*); 6.VII.1968, K.P. Dumont et al. 98 (INPA 65136, as *T. scabrosa*); 23.V.1984, R.D. Goos et al. 1631 (INPA 125136); 1.VI.1984, R.D. Goos et al. 1719 (INPA 125221); Porto Velho, Parque Natural Municipal de Porto Velho, VII.2007, A.C. Gomes-Silva 06-60 (URM 79570, URM 79579); Estação Ecológica de Cuniã, II.2007, A.C. Gomes-Silva 236 (URM 79578); Roraima: Alto Alegre, 10.VI.1986, K.F. Rodrigues et al. 885-895 (INPA 143282, INPA143289); 10.VI.1986, E.S.S. da Silva 410 (INPA 154906, INPA 154940); loc. n. det., 18.VI.1986, B. Lowy et al. 2069 (INPA 145354, as *Daedalea* sp.).

Remarks: *Trametes supermodesta,* first described from Venezuela by Ryvarden & Iturriaga (2003), is recognized by its large pores and long basidiospores. *Trametes supermodesta* may be mistaken for *T. modesta* due to its similar basidiomata color, but the pores are larger (2–3 per mm) in *T. supermodesta* than in *T. modesta* (6–10 per mm). The Brazilian specimens of *T. supermodesta* differ macroscopically from the original description by the smaller pores (2–3 per mm vs. 3–4 per mm in the original) and thinner basidiomata.

Key to the species of *Trametes* recorded from the Brazilian Amazonia

1a. Context with black lines 2
1b. Context without black lines 4
2a. Pores daedaloid, 2–3 per mm, basidiospores 4.5–5.5 µm long ..... *T. maxima*
2b. Pores regular or lacerate, 1–5 per mm, basidiospores 5–8.5 µm long 3
3a. Pores dentate to lacerate, 1–3 per mm, basidiospores cylindrical to allantoid 5.5–8.5 × 2.5–3.5 µm ..... *T. villosa*
3b. Pores angular to circular, 4–5 per mm, basidiospores cylindrical 5–6 × 1.5 µm ..... *T. versicolor*
4a. Abhymenial surface with reddish cuticle from the base ..... *T. cubensis*
4b. Abhymenial surface without reddish cuticle from the base 5
5a. Abhymenial surface azonate or slightly zoned 6
5b. Abhymenial surface strongly zoned 9

6a. Abhymenial surface tomentose to finely pubescent, context not reacting in KOH ..... *T. pubescens*
6b. Abhymenial surface velutine to glabrous, context reacting in KOH 7

7a. Basidiomata white to cream, context dark brown in KOH, basidiospores cylindrical-ellipsoid 4–7.5 × 2–3 µm ..... *T. lactinea*
7b. Basidiomata pale pinkish brown, context red in KOH, basidiospores cylindrical 8

8a. Pores 6–10 per mm, basidiospores 4–6 × 1.5–2 µm ..... *T. modesta*
8b. Pores 2–3 per mm, basidiospores 8–9 × 2.8–3.5 µm ..... *T. supermodesta*

9a. Basidiomata sessile to effused-reflexed, basidiospores cylindrical 10
9b. Basidiomata sessile, basidiospores cylindrical-ellipsoid to ellipsoid 12

10a. Basidiomata ochraceous to brown, abhymenial surface smooth to tuberculate, glabrous, context homogeneous, basidiospores 4 µm long..... *T. ochroflava*
10b. Basidiomata whitish to cream, abhymenial surface finely velutine to tomentose, context cottony or fibrous, basidiospores up to 3.5 µm long 11

11a. Context cottony, pores 3–5 per mm, dissepiments entire, basidiospores 7–11 × 2.5–3.5 µm ..... *T. cotonea*
11b. Context fibrous, pores 5–6 per mm, dissepiments lacerate to dentate, basidiospores 4.5–6 × 2–2.5 µm ..... *T. membranacea*

12a. Abhymenial surface glabrous, pores round, basidiospores cylindrical-ellipsoid, 6–7 × 2–2.5(–3) µm ..... *T. marianna*
12a. Abhymenial surface tomentose, pores angular, basidiospores ellipsoid, 5–6 × 3–4 µm ..... *T. pavonia*

Trametes cotonea (Pat. & Har.) Ryvarden, Norw. JI Bot. 19: 236 (1972).

≡ *Polyporus cotoneus* Pat. & Har., Bull. Soc. mycol. Fr. 9: 208 (1893).

Material examined: BRAZIL. Amazonas: Presidente Figueiredo, 3.IV.1984, M.A. de Jesus 390 (INPA 185336, as *T. nivosa*); Rondônia: loc. n. det., 27.X.1979, R. H. Petersen 273 (INPA 110762, as *Polyporus* sp.); Roraima: Caracaraí, 16.XI.1977, I. de J. Araújo et al. 437-506 (INPA 76964, INPA 77217); loc. n. det., 30.XI.1977, I. de J. Araújo et al. 733 (INPA 78452, as *T. membranacea*).

Description — Ryvarden & Johansen (1980).

Distribution — Pantropical (Ryvarden & Johansen 1980, Ryvarden 2000). In Brazil, reported for the states of Acre, Pará (Gomes-Silva & Gibertoni 2009), and now for the states of Amazonas, Rondônia and Roraima.

Notes — This species can be recognized in the field by the flexible, cream basidiomata. Macroscopically it is similar to *T. membranacea* but differs by shorter basidiospores.

Trametes cubensis (Mont.) Sacc., Syll. Fung. 9: 198 (1891).

≡ *Polyporus cubensis* Mont., Annls Sci. Nat., Bot., sér. 2, 8: 364 (1837).

Material examined: BRAZIL. Acre: loc. n. det., 10.X.1980, B. Lowy et al. 585 (INPA 100437, as *Polyporus* sp.); 26.X.1980, B. Lowy et al. 988 (INPA 100762, as *Polyporus* sp.); Amazonas: loc. n. det., 6.XI.1977, E.M.L. Freire 158 (INPA 70059); 22.V.1978, R. Singer &

I.J Araújo 11033 (INPA 76881, as *Microporellus* sp.); 1.VIII.1979, A.C. Webber 62 (INPA 84271, as *Fomitopsis* sp.); 16.IX.1980, B. Lowy et al. 170 (INPA 100084, as *Polyporus* sp.); Presidente Figueiredo, 21.IX.1983, M.A. de Jesus 31-32 (INPA 183649, INPA 183650); Fonte Boa, 1.XI.1986, E.S.S. da Silva et al. 923 (INPA 155037); Pará: Itaituba, 29.IX.1977, M. A. Sousa 8-38 (INPA 84083, INPA 84082, as "*Fomitopsis cubensis*"); Rondônia: loc. n. det., 29.VI.1968, K.P. Dumont et al. 12 (INPA 64827, as *T. scabrosa*); Porto Velho, Parque Natural Municipal de Porto Velho, VII.2007, A.C. Gomes-Silva 276 (URM 79554); Roraima: loc. n. det., 24.VII.1974, G.T. Prance et al. 21386-21366 (INPA 112093, as *Polyporus phlebeius*, INPA 45341); Boa Vista, 21.XI.1977, L. de L. J. Aguiar et al. 665 (INPA 78384).

Description — Gilbertson & Ryvarden (1987).

Distribution — Neotropical, and subtropical areas of the USA (Gilbertson & Ryvarden 1987). In Brazil, reported for the states of Pará (Gomes-Silva & Gibertoni 2009), Bahia, Paraná, Pernambuco, Rio Grande do Sul, São Paulo and Santa Catarina (Baltazar & Gibertoni 2009). It is a new record for the states of Acre, Amazonas, Rondônia and Roraima.

Notes — This species can be recognized in the field by the dimidiate basidiomata with a reddish cuticle from the base.

Trametes lactinea (Berk.) Sacc., Syll. Fung. 6: 343 (1888).

≡ *Polyporus lactineus* Berk., Ann. Mag. nat. Hist. 10: 373 (1842).

Material examined: BRAZIL. Acre: loc. n. det., 11.X.1980, B. Lowy et al. 644 (INPA 100484, as *Polyporus* sp.); Amazonas: Manaus, 1.II.1992, M.A. de Jesus 1523 (INPA 192732); 28.IV.1996, K. Vohland 1808 (INPA 216386, as *T. menziesii*); Pará: Melgaço, VIII.2007, T. B. Gibertoni (URM 79949, URM 79950); II.2008, T. B. Gibertoni (URM 79951); Rondônia: Porto Velho, Bairro Arigolândia, VII.2007, A.C. Gomes-Silva 41 (URM 79557); Estação Ecológica de Cuniã, VII.2008, A.C. Gomes-Silva 568-584 (URM 79555, URM 79556); Fazenda Mucuim, VII.2007, A.C. Gomes-Silva 106-156-261 (URM 79558, URM 79564, URM 79566); Parque Natural Municipal de Porto Velho, II.2007, A.C. Gomes-Silva 05-04-14 (URM 79561, URM 79562, URM 79569); VII.2007, A.C. Gomes-Silva 62-259 (URM 79563, URM 79565); II/2008, A.C. Gomes-Silva 461-462-450-455 (URM 79559, URM 79560, URM 79567, URM 79568).

Description — Núñez & Ryvarden (2001).

Distribution — Pantropical (Núñez & Ryvarden 2001). In Brazil, recorded in the state of Pará (Gomes-Silva & Gibertoni 2009). It is a new record for the states of Acre, Amazonas and Rondônia.

Notes — The glabrous abhymenial surface and variable brown color of the basidiomata are similar to those of *Lenzites elegans* (Spreng.) Pat., but this species is macroscopically different due to its thicker basidiomata and the lamellate to sinuous hymenial surface.

Trametes maxima (Mont.) A. David & Rajchenb., Mycotaxon 22(2): 315 (1985).

≡ *Irpex maximus* Mont., Annls Sci. Nat., Bot., sér. 2, 8: 364 (1837).

Material examined: BRAZIL. Acre: loc. n. det., 24.IV.1971, G.T. Prance et al. 12411 (INPA 30734); Amazonas: loc. n. det., 4.IV.1978, R.B. Singer & I. de J. Araújo 10930

(INPA 76880, as *Irpex* sp.); Roraima: Caracaraí, 16.XI.1977, I. de J. Araújo et al. 421 (INPA 76948, as *Coriolus maximus*).

Description — Gilbertson & Ryvarden (1987).

Distribution — Neotropical, also known in subtropical areas of the USA (Gilbertson & Ryvarden 1987). In Brazil, recorded in the state of Amapá and Pará (Gomes-Silva & Gibertoni 2009). It is a new record for the states of Acre, Amazonas and Roraima.

Notes — The hydnoid hymenial surface and the context with black zone characterize this species.

Trametes membranacea (Sw.) Kreisel, Monografias, Ciências, Univ. Habana, Ser. 4, 16: 83 (1971).

≡ *Boletus membranaceus* Sw., Fl. Ind. Occid. 3: 1922 (1806).

Material examined: BRAZIL. Amazonas: Manaus, 22.I.1978, I. de J. Araújo et al. 976 (INPA 78748, as *Coriolus* sp.); 22.VI.1985, M.A. de Jesus 726 (INPA 185959); 1.VI.1990, M.A. de Jesus 1392 (INPA 192659); Pará: Itaituba, 29.IX.1977, M.A. de Sousa & L.F. Coêlho 55 (INPA 74633, as *Coriolus pinsitus*).

Description — Gilbertson & Ryvarden (1987).

Distribution — Neotropical, also known in subtropical areas of the USA and Argentina (Gilbertson & Ryvarden 1987). In Brazil, recorded in the state of Amapá, Pará (Gomes-Silva & Gibertoni 2009), Bahia, Minas Gerais, Paraíba, Paraná, Pernambuco, Rio Grande do Sul, Santa Catarina (Baltazar & Gibertoni 2009) and now found in Amazonas.

Notes — This species is characterized by the papyraceous, flabelliform, cream to beige basidiomata. It is similar to *T. pavonia*, but differing by the cylindrical basidiospores.

Trametes modesta (Kunze) Ryvarden, Norw. JI Bot. 19: 236 (1972).

≡ *Polyporus modestus* Kunze, in Weigelt, Surinam Exsiccati (1828)

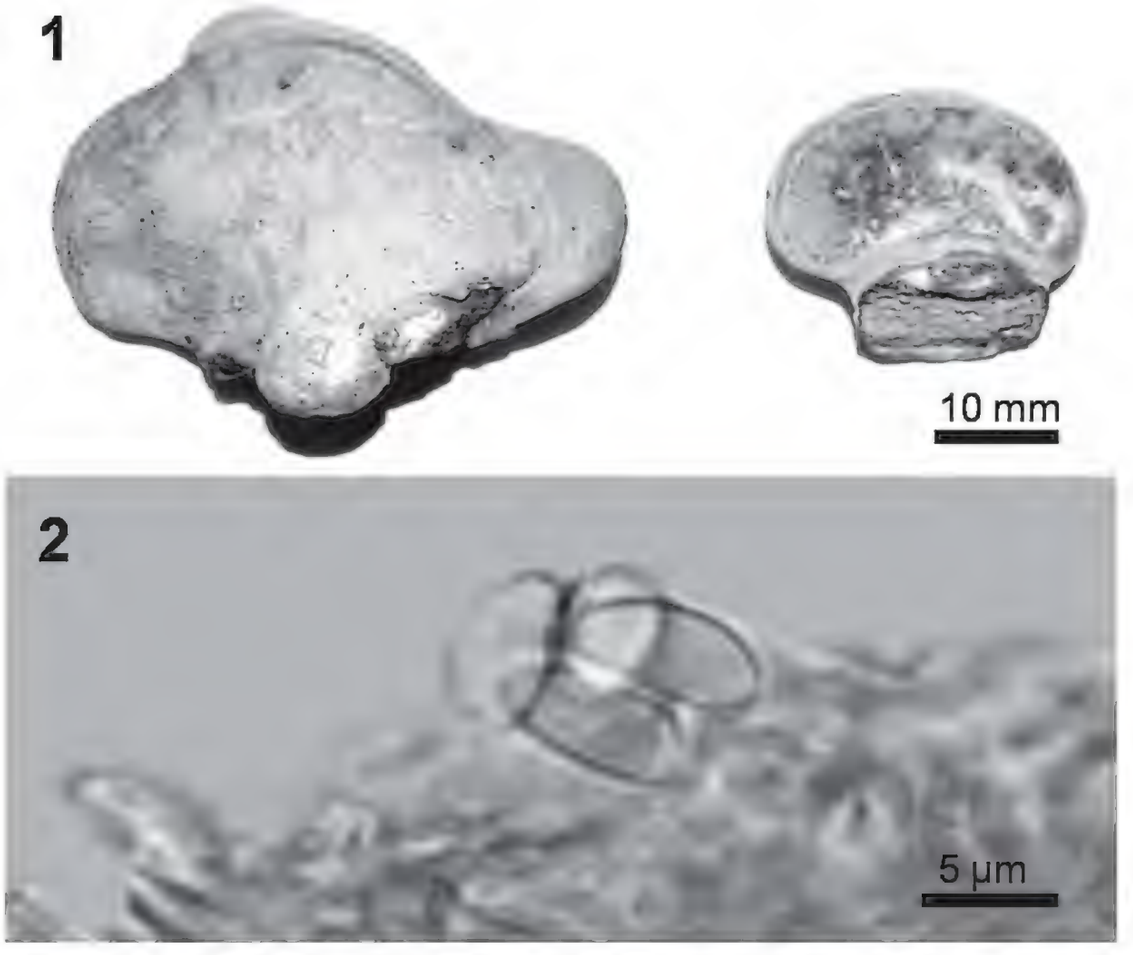
Material examined: BRAZIL. Acre: Rio Branco, 24.IX.1980, B. Lowy et al. 247 (INPA 100178, as *Polyporus* sp.); 7.X.1980, B. Lowy et al. 510-511 (INPA 100427, INPA 100478, as *Polyporus* sp.); 9.X.1980, B. Lowy et al. 554 (INPA 100407, as *Polyporus* sp.); 20.X.1980, B. Lowy et al. 819 (INPA 100669, as *Polyporus* sp.); 24.X.1980, B. Lowy et al. 906 (INPA 100777, as *Polyporus* sp.); 1.XI.1980, B. Lowy et al. 1018 (INPA 100842, as *Polyporus* sp.); loc. n. det., 27.IX.1980, B. Lowy et al. 309 (INPA 100279, as *Polyporus* sp.); 28.IX.1980, B. Lowy et al. 332 (INPA 100233); 4.XI.1980, B. Lowy et al. 1102-1094 (INPA 100866, INPA 100928, as *Polyporus* sp.); Amazonas: Aripuanã, 23.IV.1985, K.F. Rodrigues et al. 307 (INPA 128981, as *Polystictus* sp.); Barcelos, 14.II.1984, G.J. Samuels et al. 303 (INPA 129337); 17.II.1984, G.J. Samuels et al. 354 (INPA 129388); 19.II.1984, G.J. Samuels et al. 458 (INPA 129486); 28.II.1984, G.J. Samuels et al. 545 (INPA 129569); 29.II.1984, G.J. Samuels et al. 592 (INPA 129612); Itacoatiara, 14.XI.1966, G.T. Prance et al. 3175 (INPA 18727); 31.XII.1966, G.T. Prance et al. 3628 (INPA 19214); 23.VII.1968, K.P. Dumont et al. 147 (INPA 65183, as *Coriolus* sp.); Manaus, 13.V.1977, M.A. de Sousa 150 (INPA 74656, as *Coriolopsis byrsina*); 10.IX.1977, M.A. de Sousa & I. de J. Araújo 147 (INPA 74654, as *Coriolopsis byrsina*); 1.XI.1977, E.M. de L. Freire 1 (INPA 92688, as *Coriolopsis byrsina*); 28.VI.1978, R. B. Singer & I. de J. Araújo 11266

(INPA 82954, as *Polyporus modestus*); 1.VIII.1978, R. B. Singer & I. de J. Araújo 11342 (INPA 82956, as *Polyporus modestus*); 27.VI.1983, M.A. de Jesus 132 (INPA 183814); 29.VII.1983, M.A. de Jesus 125 (INPA 183808); 22.V.1985, M.A. de Jesus 735-746 (INPA 185965, INPA 185976); 6.X.1985, K.F. Rodrigues et al. 801 (INPA 137087); 22.VI.1989, R.E. Hanada 1006 (INPA 186282); 17.VII.1990, M.A. de Jesus 1448 (INPA 192694); 14.XII.1990, M.A. de Jesus 1433 (INPA 192686); 17.XII.1990, M.A. de Jesus 1455 (INPA 192700); 9.I.1992, R.E. Hanada 1522 (INPA 192731); 15.IX.1992, M.A. de Jesus 1533 (INPA 192739); 9.II.1993, M.A. de Jesus 1542 (INPA192744); Manicoré, 14.IV.1985, K.F. Rodrigues et al. 126 (INPA 128926, as *Polystictus* sp.); Novo Aripuanã, 23.IV.1985, K.F. Rodrigues et al. 323 (INPA 128987); Presidente Figueiredo, 25.VI.1984, M.A. de Jesus 443 (INPA 185381); loc. n. det., 6.X.1966, G.T. Prance et al. 2602 (INPA 18770, as *Polyporus modestus*); 1.XI.1977, E. M. de L. Freire 145 (INPA 70048, as *Coriolopsis* sp.); 14.I.1978, I. de J. Araújo et al. 887 (INPA 78643, as *Polyporus* sp.); 21.I.1978, M. L. Farr et al. 176 (INPA 164405); 22.I.1978, M. L. Farr et al. 222 (INPA 164432); Pará: Itaituba, 29.IX.1977, M.A. de Sousa & L. F. Coêlho 19 (INPA 74690, as *Fomitopsis* sp.); 1.X.1977, M.A. de Sousa & L. F. Coêlho 82 (INPA 74528, as *Coriolopsis* sp.); 2.X.1977, M.A. de Sousa & L. F. Coêlho 105 (INPA 74534, as *Coriolopsis* sp.); 4.X.1977, M.A. de Sousa & L. F. Coêlho 19 (INPA 74627, as *Fomitopsis* sp.); Oriximiná, 17.VI.1980, V.L.R. Bononi 347 (INPA 103419, as *Polyporus* sp.); 19.VI.1980, V.L.R. Bononi 439 (INPA 103483); 29.VI.1980, V.L.R. Bononi 788 (INPA 103706); 1.VII.1980, V.L.R. Bononi 889 (INPA 103766, as *Coriolus* sp.); 2.VII.1980, V.L.R. Bononi 970 (INPA 103829, as *Coriolus* sp.); Melgaço, VII.2006, T. B. Gibertoni (URM 79929, URM 79928, URM 79931, URM 79934, URM 79927, URM 79930, URM 79932, URM 79933, URM 79935); VII.2007, T. B. Gibertoni (URM 79937, URM 79944, URM 79941, URM 79943, URM 79940, URM 79942, URM 79938, URM 79945, URM 79948, URM 79939, URM 79936); II.2008, T. B. Gibertoni (URM 79947, URM 79946); Rondônia: loc, n. det., 3.VII.1968, K.P. Dumont et al. 56-61 (INPA 65097, INPA 65101); Porto Velho, Parque Natural Municipal de Porto Velho, II.2007, A.C. Gomes-Silva 172-241 (URM 79217, URM 79572); VII.2007, A.C. Gomes-Silva 06-52-53-173-191-233-237 (URM 79570, URM 79571, URM 79216, URM 79218, URM 79221, URM 79219, URM 79220); II.2008, A.C. Gomes-Silva 285-318 (URM 79024, URM 79025); VII.2008, A.C. Gomes-Silva 613-619 (URM 79576, URM 79577); Estação Ecológica de Cuniã, VII.2007, A.C. Gomes-Silva 233-237-242 (URM 79219, URM 79220, URM 79222); VII.2008, A.C. Gomes-Silva 566-567-578 (URM 79573, URM 79574, URM 79575); Roraima: Alto Alegre, 10.VI.1986, E.S.S. da Silva et al. 465-412 (INPA 154936, INPA 154908);12.VI.1986, K.F. Rodrigues et al. 948 (INPA 143328); 19.VI.1986, K.F. Rodrigues et al. 1052 (INPA 143400); Boa Vista, 21.XI.1977, L. de L. J. Aguiar et al. 701 (INPA 78420); 19.VII.1989, M.A. de Jesus 886 (INPA 186191); Caracaraí, 16.XI.1977, I. de J. Araújo et al. 461 (INPA 76988); loc. n. det., 13.I.1969, G.T. Prance et al. 9275 (INPA 26410); 17.I.1969, G.T. Prance et al. 9320 (INPA 26456); 6.II.1969, G.T. Prance et al. 9643 (INPA 26779); 24.III.1971, G.T. Prance et al. 11197 (INPA 29598, as *Coriolopsis* sp.).

Description — Gilbertson & Ryvarden (1987).

Distribution — Pantropical (Núñez & Ryvarden 2001). In Brazil, it was recorded in the states of Bahia, Pernambuco, São Paulo (Baltazar & Gibertoni 2009), Acre, Amazonas, Pará, Rondônia, Roraima (Gomes-Silva & Gibertoni 2009), and Mato Grosso (Gibertoni & Drechsler-Santos 2010).

Notes — The species may be confused with *T. supermodesta*, but is distinguished by the smaller pores (6–10 per mm) and basidiospores (4–6 × 1.5–2 µm).



Figures 1–2. *Trametes ochroflava*. 1. Basidiomata. 2. Basidiospores.

Trametes ochroflava Cooke, Grevillea 9(no. 49): 12 (1880). Figures 1–2

Material examined: BRAZIL. Acre: loc. n. det., 17.X.1980, B. Lowy et al. 750 (INPA 100602, as *Polyporus* sp.); 22.X.1980, B. Lowy et al. 850 (INPA 100679, as *Polyporus* sp.); Amazonas: Humaitá, 25.XI.1966, G.T. Prance & J.F. Ramos 3316 (INPA 18891); loc. n. det., 20.IX.1977, M.A. de Sousa 330 (INPA 74749); Rondônia: loc. n. det., 2.VI.1984, R.D. Goos et al. 1760 (INPA 125259, as *Polyporus* sp.); Roraima: loc. n. det., 17.XI.1977, I. de J. Araújo et al. 570 (INPA 77559, as *Daedalea* sp.); 18.VII.1986, B. Lowy et al. 2208 (INPA 145485, as *Ganoderma* sp.); Pará: Oriximiná, 28.VI.1980, V.L.R. Bononi 679 (INPA 103633).

Description — Ryvarden (1988).

Distribution — Known from Brazil (Ryvarden 1988). In Brazil, reported from the states of Bahia, Rio de Janeiro and Rio Grande do Sul (Baltazar & Gibertoni 2009). It is a new record for the Brazilian Amazonia.

Notes — This species (Fig 1) resembles poroid specimens of *Lenzites elegans*, which are whitish and thinner. The basidiospores were not found in the type and not previously known (Ryvarden 1988), but a few were seen in INPA 18891 (Fig 2) and are cylindrical, hyaline, thin-walled, 8–10 × 4 µm.

Trametes pavonia (Hook.) Ryvarden, Norw. Jl Bot. 19: 236 (1972), nom. illegit., non (Berk.) Fr. 1851.

≡ *Boletus pavonius* Hook., Syn. Pl. 1: 10 (1822).

Material examined: BRAZIL. Amazonas: Barcelos, 11.VII.1985, E.S.S. da Silva et al. 283 (INPA 153723); Manaus, 13.V.1977, M.A. de Sousa & I. de J. Araújo 88-325 (INPA 74662, INPA 74718); 28.I.1997, M.A. de Jesus 1912 (INPA 216449); 2.V.1997, A. Luis 2270 (INPA 192823); loc. n. det., 26.VI.1971, G.T. Prance et al. 13735 (INPA 31951, as *Coriolopsis* sp.); Rondônia: loc. n. det., 8.XI.1979, R. H. Petersen 445 (INPA 110933, as *Polyporus* sp.); Roraima: Alto Alegre, 21.VI.1986, K.F. Rodrigues et al. 1090 (INPA 143431); loc. n. det., 18.VI.1986, B. Lowy et al. 2169 (INPA 145449, as *Polyporus* sp.).

Description — Gilbertson & Ryvarden (1987).

Distribution — Tropical America to northern Argentina (Gilbertson & Ryvarden 1987). In Brazil, reported from the states of Alagoas, Pernambuco and Santa Catarina (Baltazar & Gibertoni 2009). It is a new record for the Brazilian Amazonia.

Notes — This species is similar to *T. membranacea*, but the flexible, concentrically zonate basidiomata distinguish *T. pavonia*.

Trametes versicolor (L.) Lloyd, Mycol. Writ. 6: 1045 (1921).

≡ *Boletus versicolor* L., Sp. pl. 2: 1176 (1753).

Material examined: BRAZIL. Amazonas: Novo Aripuanã, 27.IV.1985, K.F. Rodrigues 388 (INPA 129004, as *Daedalea* sp.); loc. n. det., 12.VIII.1977, M.A. de Sousa 244 (INPA 74642, as *Coriolus* sp.).

Description — Núñez & Ryvarden (2001).

Distribution — Cosmopolitan (Núñez & Ryvarden 2001). In Brazil, in Pará (Gomes-Silva & Gibertoni 2009), Bahia, Paraná, Rio Grande do Sul, São Paulo, Santa Catarina (Baltazar & Gibertoni 2009) and now in Amazonas.

Notes — This species is characterized by the thin, tomentose, zonate basidiomata, also extremely variable in color.

Trametes villosa (Sw.) Kreisel, Monografias, Ciências, Univ. Habana, Ser. 4, 16: 83 (1971).

≡ *Boletus villosus* Sw., Fl. Ind. Occid. 3: 1923 (1806).

Material examined: BRAZIL. Amazonas: Manaus, 6.III.1997, M.A. de Jesus 2060 (INPA 192826, as *T. menziesii*); 2.V.1997, M.A. de Jesus 2269 (INPA 192827, as *T. menziesii*); 1.VII.1997, M.A. de Jesus 2346 (INPA 192818); 21.X.1997, M.A. de Jesus 2501 (INPA 192820); Roraima: Alto Alegre, 12.VI.1986, K.F. Rodrigues et. al. 938 (INPA 143318); 16.VI.1986, K.F. Rodrigues et. al. 996 (INPA 143363); 17.VI.1986, E.S.S. da Silva et al. 483 (INPA 154950); 18.VI.1986, K.F. Rodrigues et. al. 1037 (INPA 143391); 21.VI.1986, K.F. Rodrigues et. al. 1071 (INPA 143415); Boa Vista, 20.VII.1989, M.A. de Jesus 920 (INPA 186221); loc. n. det., 24.VII.1974, G.T. Prance et al. 21368 (INPA 45343, as *Coriolus pinsitus*); 16.VI.1986, B. Lowy et al. 1227 (INPA 144553, as *Coriolus* sp.).

Description — Gilbertson & Ryvarden (1987).

Distribution — Neotropical, also known from subtropical areas in the USA and Argentina (Gilbertson & Ryvarden 1987). In Brazil, recorded in the states of Amapá,

Pará, Roraima (Gomes-Silva & Gibertoni 2009), Bahia, Paraná, Rio de Janeiro, Rio Grande do Sul, São Paulo, Santa Catarina (Baltazar & Gibertoni 2009, Gibertoni & Drechsler-Santos 2010), and now in Amazonas.

Notes— The thin basidiomata with large pores (2–3/mm) characterizes this species.

Acknowledgments

We would like to thank Dr. Annarosa Bernicchia and Dr. Erast Parmasto for critically reviewing the manuscript; Ana Cristina R. Souza, curator of the HFSL, for support during the field trips of ACGS; Carlos Franciscon, curator of INPA, for the loan of exsiccates; and the staff of the ECFPn and of the MPEG for support during the field trips of TBG. Further, we acknowledge the Conselho Nacional de Desenvolvimento Científico (CNPq) for the master scholarship and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes) for the doctorate scholarship of ACGS; the Instituto Internacional de Educação do Brasil (IEB) and the Gordon and Betty Moore Foundation for the Scholarship of Studies on Amazonia Conservation (BECA) to ACGS and TBG; the Dottorato di Ricerca in Ecologia Sperimentale e Geobotanica (Università degli Studi di Pavia, Italy), the Pós-Graduação em Biologia de Fungos (UFPE, Brazil) and the Instituto Nacional de Ciência e Tecnologia - Herbário Virtual de Plantas e Fungos (CNPQ - 573883/2008-4) for partially financing this study.

Literature cited

Baltazar JM, Gibertoni TB. 2009. A checklist of the aphyllophoroid fungi (*Basidiomycota*) recorded from the Brazilian Atlantic Forest. Mycotaxon 109: 439–422.

Capobianco JPR, Veríssimo A, Moreira A, Sawyer D, Santos IP, Pinto LP. 2001. Biodiversidade na Amazônia brasileira: avaliação e ações prioritárias para a conservação, uso sustentável e repartição de benefícios. Estação Liberdade: Instituto Sócio ambiental, São Paulo.

Gibertoni TB, Drechsler-Santos ER. 2010. Lignocellulolytic *Agaricomycetes* from the Brazilian Cerrado biome. Mycotaxon 111: 87–90.

Gilbertson RL, Ryvarden L. 1987. North American Polypores, Vol. 2. Fungiflora, Oslo, p. 434–885.

Gomes-Silva AC, Gibertoni TB. 2009. Checklist of the aphyllophoraceous fungi (*Agaricomycetes*) of the Brazilian Amazonia. Mycotaxon 108: 319–322.

IBGE 2003. Mapa de Biomas. <http://www.ibge.gov.br/home/presidencia/noticias/>.

Kirk PM, Cannon PF, Minter DW, Stalpers JA. 2008. Dictionary of the Fungi. 10 ed. CABI Publishing, Surrey. 771 pp.

Lisboa PLB. 2002. A Estação Científica Ferreira Penna/ECFPn (1993–2000). In: Lisboa PLB (org.). Caxiuanã: populações tradicionais, meio físico e diversidade biológica. Museu Paraense Emilio Goeldi, Belém.

Núñez, M., Ryvarden, L. 2001. East Asian Polypores, Vol. 2. Synopsis Fungorum 14, Fungiflora, Oslo, p. 167–522.

Ryvarden L, Johansen I. 1980. A preliminary polypore flora of East Africa. Oslo, Fungiflora, 630 pp.

Ryvarden L. 1988. Type studies in the *Polyporaceae* 19. Species described by M.C. Cooke. Mycotaxon 31: 45–58.

Ryvarden L. 1991. Genera of Polypores – Nomenclature and taxonomy. Synopsis Fungorum 5: 1–363.

Ryvarden L. 2000. Studies in neotropical polypores 8. Poroid fungi from Jamaica – a preliminary checklist. Mycotaxon 76: 349–360.

Ryvarden L, Iturriaga T. 2003. Studies in neotropical polypores 10. New polypores from Venezuela. Mycologia 95(6): 1066–1077. doi:10.2307/3761913.

Ryvarden L, Gilbertson RL. 1993. European Polypores, Vol. 2. Fungiflora, Oslo, p. 394–743.

Watling R. 1969. Colour Identification Chart. Her Majesty's Stationary Office, Edinburgh (Scotland).